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Software Applications • Privatization

A Publication of Communication Channels, Inc.

JANUARY 1987

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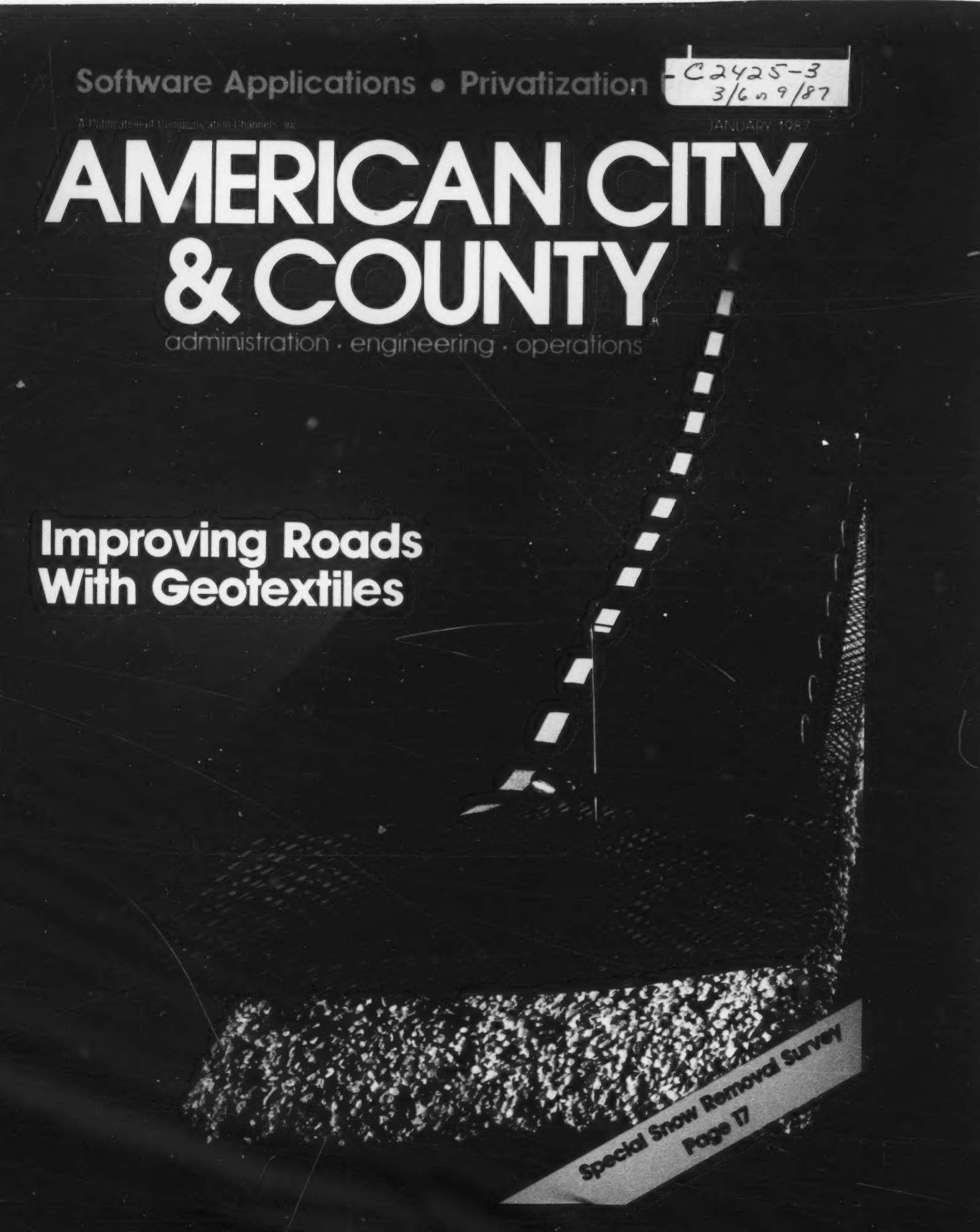
Improving Roads With Geotextiles



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VBPA

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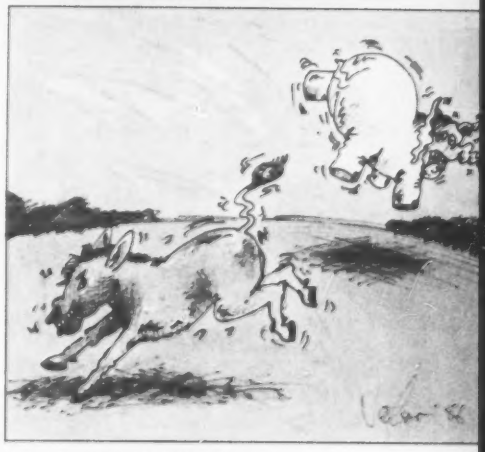

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Software Goes Public

Specific software programs designed for municipal use are creating a valuable middle ground between off-the-shelf software and user-created programs.

By Joe Morris, Assistant Editor

Fort Collins, Colo., had a problem a few years ago. The city's Engineering Department wanted to automate some administrative and engineering functions, but was unable to purchase a software program tailored to the city's specific needs. Eventually, the department wrote programs for administrative and budget-tracking applications, programs tailored to suit the department's needs, says Jay Kole, special projects administrator.

"We know exactly what we need," Kole says, "and I'm not sure if anyone else understands that."

This year, however, Kole's department was able to purchase a pavement management system written specifically for the city. Ready-made systems are available for such applications, but Fort Collins chose a system written by a vendor, Kole says.

"There are pavement management systems available off the shelf, but we got a vendor-written one," he says. "Sometimes in the past, databases weren't quite right, but now more specific programs are available."

This shift in availability signals a change in the software industry. While user-ready packages have been available for years, vendors now are tailoring specific software packages for users. In tandem with this effort, many vendors are pursuing public dollars actively. Marketing strategies are being geared toward the municipal market, and specifically, public works.

"We had the option of creating another in-house program, but we were able to get the vendor to modify their pavement management program to suit our needs, so we purchased it," Kole says.

In Holyoke, Mass., the Public Works Department wrote the software for its street inventory and fleet maintenance functions in-house, says Craig Dolan, public works director. "We did the programs in-house because we had a strong notion of what we needed to have," he says, "and we had a programmer who was ready, willing and able to do the work at a modest price."

But Dolan adds that Holyoke's programs were written in 1982, before the boom in local government software began. "If we were approached now, I'd certainly be willing to look at what someone had to offer. We were just ahead of the game."

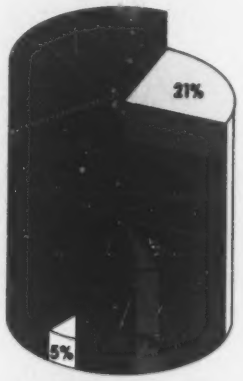
In fact, the city has installed a vendor-purchased program in its wastewater treatment plant, a program operated independently from the Public Works Department's computer.

"We were looking for someone else's program for the wastewater treatment plant," Dolan says, "because we thought self-designing might not have served our best interests in this instance." Although the program cost "substantially more" than the programs written in-house, Dolan says he is happy with both groups of software.

As prices on equipment and software packages drop, vendors are not the only ones pursuing the municipal market. Recently, the American Public Works Association got into the act, aiding in the creation of a pavement management program called PAVER. Several municipalities contributed funds for the software's creation, and along with the APWA, control the rights to the software. The package is then, in turn, sold to municipalities nationwide.

Pavement management, wastewater treatment and vehicle maintenance are just a few examples of software pro-

Software Applications *



*Based on a 1986 survey from the American Public Works Association.

Delray Beach Contracts Boost Computer Life

By Richard Fixel

Palm Beach County, Fla., was interested in a full-service, on-site microcomputer maintenance program. The county's cooperative purchasing group solicited bid quotations from 21 vendors, including six national companies. After viewing all bid proposals and meeting with the top four bidders, an award was made representing a 50 percent cost savings. Initially, the award was not supported by all group members, since some had to honor existing contracts.

Each member derived additional benefits that varied according to their operational procedures. Delray Beach, a member of the purchasing group, realized an $8,000 to $11,000 savings during the program's first year. In addition, the full-service maintenance contract enabled the city to save the cost of developing its own in-house microcomputer maintenance program, which had a projected cost of $76,800 per year.

In the invitation to bid, the purchasing group wanted two issues addressed. One, how would bidders be able to respond to the invitaton to bid if the group was unable to provide a complete equipment list? And second, conditions and standards would have to be formed to specify vendor responsibilities, minimize downtime and provide an ongoing review of services throughout the contract period.

A master list by customer location for all PCs, which included CPUs, internal boards and peripheral equipment, could not be provided by group members. Several members explained they could not provide a detailed list since there were board and memory transfers between PCs, and additions and deletions to the PCs, which had occurred undetected by the Data Processing and Purchasing departments.

Since developing a master list would be economically prohibitive, an alternative approach was adopted. First, the invitation to bid would include a PC demographic list, and a master list of 400 component line items by manufacturer. The list would reflect the most common computer parts found throughout the group's systems.

By reviewing PC demographics and working with the parts lists, bidders would be able to plan staffing patterns, project parts inventory levels, and price out charges for the component part lists. In order to determine the maintenance costs for each work station, the bidders were asked to quote a flat rate for survey and cleaning all equipment, and provide each member with a PC location list reflecting annual maintenance costs. Maintenance costs would be based on integrating the component price list with survey findings. By using a component parts list, members could add, transfer, or delete components throughout the contract year at a pro-rated price.

To determine which bidder could best meet individual and collective needs, a list of conditions and standards was established. The list specified that the vendor must demonstrate all technicians had completed the IBM training school or equivalent successfully; agree all service would be performed by staff whose names and credentials had been submitted to the group; identify the staffing pattern; guarantee a response time to service calls; assure service technicians were to survey and clean equipment; and instruct two operators how to perform diagnostic tests. Other requirements of the contract covered areas such as replacement parts, annual cleaning, loaner units, warranty equipment, and semi-annual and annual reports.

Each member of the group is responsible for monitoring its own program. Reports and the dialogue between vendor and customer were designed to identify and resolve operational problems that may arise. The service report would indicate the frequency of calls per PC, and what steps the technician took to resolve the problem. If a reoccuring problem fell outside the maintenance program guidelines, a dialogue between vendor and customer would determine what steps needed to be taken. Documented service reports and open communication between the customer and the vendor would minimize down time and the frequency of service calls. □

Richard Fixel is the purchasing administrator for Delray Beach, Fla.

grams available to public works departments today. And, with more vendors appearing on the marketplace, the range of options is likely to grow.

While computers in public works departments are not an uncommon sight, equipment displaying graphic maps of city streets and making recommendations on repair schedules is somewhat unusual. Innovative new software, however, coupled with state-of-the-art equipment, is making such pictures commonplace in municipalities around the country.

Although software packages handling administrative drudgery such as billing, filing and record-keeping have become standard, municipalities have been slow to delve into other automation functions. But, with increasing computer capabilities, as well as a growing understanding of the basic equipment, cities and counties are experimenting with public works programming at an exceptionally high rate.

Why the sudden abundance of public works software? "We're being looked at as a new market," says Ronald Ford, public works director of Concord, N.H. "The public sector is sometimes the last to be hit for certain improvements. The private sector is probably saturated, and now vendors are coming into the public sector."

Concord, like most smaller cities, does not have a heavily automated public works department. Equipment prices are dropping, however, and as more software becomes available, smaller municipalities are finding themselves in the computer business. As more smaller cities are able financially to move into the computer market, vendors are scrambling for their piece of the software market pie.

Dropping costs

"In some areas, there has been a demonstration that computers are becoming more viable, depending on the numbers and the end result," Ford says. "Smaller municipalities are coming into the market now — we can remember horrendous costs for equipment, but competition is lowering the price."

"Because many of the newer programs can be performed on PCs as well as mainframes," says Delilah Libby, administrative and fiscal manager for the Tampa, Fla., Department of Public Works, "we're seeing more small governments being able to afford programs."

"Computerization and software have lost the stigma of being something just for the largest municipalities," says Mary Ball, marketing practices consultant for Digital Systems Inc. "And as more municipalities automate, they want more than just meat and potatoes administrative systems."

"It's an amazing phenomenon," adds

David Sonnen, national marketing director for Deltasystems. "Equipment is becoming cheaper and cheaper and its capabilities are increasing at an inverse rate."

"A city of 30,000 to 85,000 people can get into the business with full-blown capacities for between $80,000 and $85,000," Sonnen adds. "That price usually includes all software and hardware."

Vendors also are finding, as more areas of the country become computer literate, that buyers no longer are settling for off-the-shelf, industry-standard software packages. City workers are learning more about the capabilities of the equipment they possess, and how to make software programs more germane to their needs.

"A lot of municipalities have learned to shop around and to see how much companies are willing to modify their packages," Ball says. "It takes more initiative on our part to support a customized system in a municipality than if the system was just plain vanilla."

But, Ball adds, vendors are dealing with specific demands from buyers, and are working to make systems easily adaptable to specific local needs.

"Municipalities are becoming more educated about what is available," she says. "People used to think software would have to be custom-made, then there was a period when the software would come directly off the shelf. Now we have both — we have systems available best-suited to specific needs, and the ability to customize a system as well."

"Sometimes in the past, databases weren't quite right, but now specific programs are available."

Some municipalities prefer to customize their own systems, or operate purely off the shelf. In Tampa, Libby says one bad experience with modification has steered the city toward more main-line software.

"Once before, we bought a program and had it modified," she says. "But we had a lot of problems with it following the modification." The city currently is seeking to replace its fleet maintenance software, and when a decision is made, Libby says the chosen system will see little changes.

"We'll stick to what we have, or choose something that does not have to be modified substantially," she says. "We want to be able to pull the software off the shelf, have it meet 70 to 80 percent of our needs, and then negotiate modifications for the rest."

Modification, while more readily available now than ever, may still not be chosen due to economic reasons. According to Libby, "The vendors are always willing to modify, but the cost may or may not be prohibitive."

Despite possible costs in implementation and modification, there are nonetheless more choices than ever for public works officials finding themselves in the midst of the software jungle. As competition between manufacturers and vendors grows, prices should drop, while variety should rise.

All this means good news for public works departments beleaguered by budget cuts and rising labor and equipment costs. As specific programs for computer-aided mapping, street maintenance and vehicle management become available, department heads are able to reduce staff and raise productivity from an initial investment.

"Five years ago, the public works market didn't exist," says R.C. Smith, vice president of Public Works Software Inc. "But the curve is getting steeper for specific departmental requirements for public works."

Smith, whose company currently is marketing a system handling computerized pavement management, says there are few applications specialized for public works that are functional and practical to implement, but the market is viable for vendors with those systems. And as prices of equipment decrease, he says the market will continue to open up.

"There's a threshold that will not be penetrated," he says. "The market has limited size, which is a drawback. It costs more time to develop a highly specialized package for this vertical market, but the market is small."

Despite the market's estimated boundaries, many vendors are continuing to pursue municipal dollars. City and county officials are being inundated with offers from companies marketing new, improved packages.

"I'm starting to see advertising for more specific programs," says Fort Collins' Kole, "and more vendors are trying to sell the newer software."

Differences on CAD

Despite the immense popularity of CAD (computer-aided design) systems, vendors say they are staying away from such expensive items. Although these systems greatly reduce workload, they often are expensive and out of reach for smaller communities.

"We look at cities and counties by

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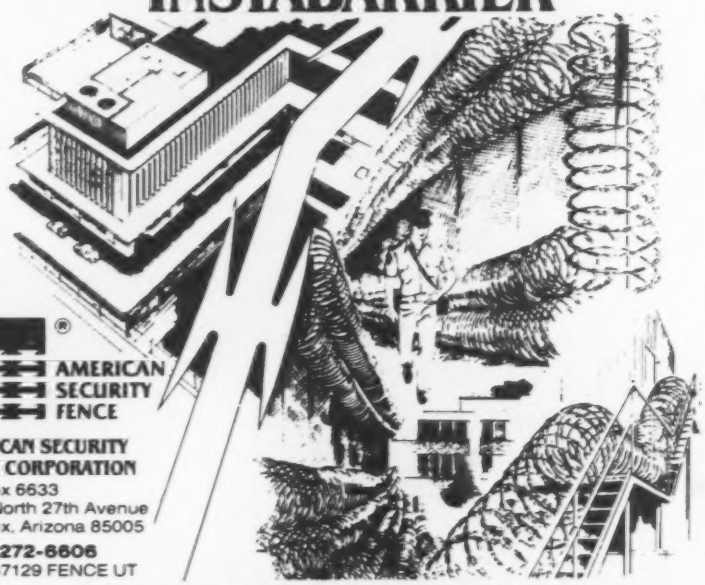

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population," Smith says. "Most of them are small, so CAD and other expensive systems are beyond them from a cost standpoint." Ten to 20 percent of U.S. cities will be large enough to gravitate into that area, he adds, but "most municipal assets in the United States are managed by small cities. Vendors who help the larger population will do the greater service."

Still, CAD systems retain enormous popularity, both for their mapping functions and, in some instances, their ability to interface with computers in other municipalities.

"CAD has been around a long time, and is still improving," Sonnen says. "There are also geographic information systems now, which can tie into other databases. If one map has the location of all city storm sewers, then these systems can tie into other data about segments of a sewer line, the maker of the sewage pipe, even the date installed."

Such systems are expensive, however, and most municipalities are in the business of stretching dollars as far as possible. For that reason, one of the most important aspects of the new systems is their relatively low cost. Most run from $5,000 to $20,000, according to manufacturers, and come with a variety of additional perks.

Systems dealing with roadway maintenance and repair, for example, can do much to lower municipal maintenance and construction costs. Vendors, realizing this, are playing up the various assets of their programs.

With more vendors appearing on the marketplace, software options are likely to grow.

"Packages are more specialized now, more than just a generic package," Smith says. "They range from $5,000 to $20,000, and are more and more user-specific." In an effort to secure as much business as possible, manufacturers and vendors seek as much technical advice as possible when creating systems. A pavement management system from Smith's company features "15 years' worth of engineering expertise built into the system," as well as a user manual describing both the system itself and the knowledge behind its creation.

As vendors move from proven areas of need, such as CAD systems and pavement management, to newer software ideas, such as geographic databases, municipalities will have unprecedented opportunities to stretch their computer muscle.

The continuing partnership between vendors, manufacturers and municipal users also will aid the software industry's growth in the local government market. Although hesitant to give exact numbers, vendors predict that within a few years most municipalities will be using some form of computer and specific software in their public works departments. Given the time- and cost-saving advantages of such computerization, that prediction means good news for cities and counties beleaguered by budget cuts and rising local taxes. □

For Information

For more information on software products discussed in the article, contact the following vendors:

Deltasystems: David Sonnen, National Marketing Director, 2629 Redwing Road, Suite 330, Fort Collins, Colo. 80526.

Public Works Software Inc., R.C. Smith, President, P.O. Box 11444, Newington, Conn. 06111.

Digital Systems Inc., Mary Ball, Marketing Practices Consultant, (803) 799-4094.

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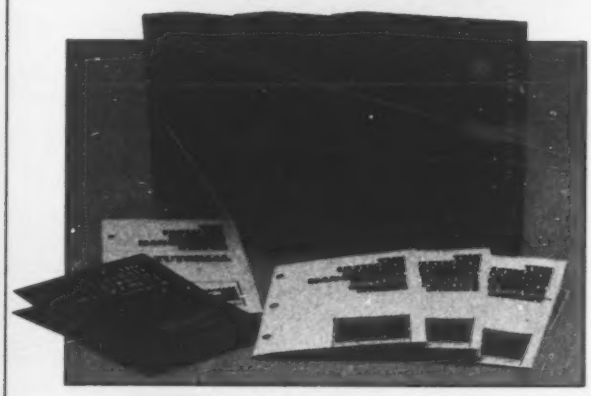

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MUNICIPAL COST INDEXES

The **Municipal Cost Index** for January rose slightly, peaking at 340.9. The **Construction Cost Index**, however, decreased for the first time in several months, dropping two-tenths of a point to 379.0. The **Consumer Price Index** continued its slow rise, leveling at 330.5, and the **Producer Price Index** rose six-tenths of a point to 298.3.

In this month's marketbasket, most products showed little fluctuation. Prices in the fuel and oil family continued to decline, but most products remained stable. Gaining ground in January were passenger cars, trucks and wiring devices.

— Compiled by Joe Morris

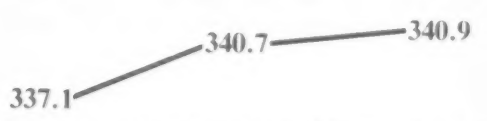
These figures are calculated on a base year of 1967.

THIS MONTH'S MARKETBASKET

	Current Index	Percent Change From: Last Month	Last Year
Air Conditioners	149.3	.1	1.4
Apparel	185.4	0	1.2
Asphalt Roofing	377.8	−2.1	−6.7
Books	142.0	1.2	4.6
Chemicals, Industrial	317.5	.7	−6.1
Coal	536.5	−.3	−1.3
Concrete Products	324.3	−.2	.4
Construction Machinery	367.1	.1	1.1
Diesel Fuel	335.1	−7.1	−49.1
Electric Components	203.3	.2	2.9
Electric Lamps	347.5	.8	−.1
Electric Power	451.7	−3.3	−.8
Engines, I.C.	353.9	0	2.1
Fans, Blowers	365.9	0	1.7
Fertilizers, Mixed	247.0	−1.0	−3.9
Floor Coverings	195.9	1.1	3.1
Flow Instruments	237.3	0	1.9
Footwear	263.5	.6	1.7
Foundry Products	361.7	0	−.7
Fuel Oil No. 2	367.1	−6.8	−48.0
Furniture	320.7	.7	3.1
Gasoline	310.9	−8.2	−43.9
Generator Sets	352.5	−.3	.3
Glass	232.7	.1	2.0
Glass Containers	400.8	0	3.2
Gypsum Products	341.9	1.0	.6
Hardware	306.6	.2	−.2
Heating Equipment	271.9	.2	4.0
HVAC Controls	129.9	1.5	2.9
LP Gas	311.7	7.2	−42.1
Lubricants	356.7	−.4	−5.1
Lumber	313.8	.5	4.2
Metal Fabrications	316.1	−.3	.2
Millwork	319.7	−.7	2.2
Motor Vehicle Parts	357.7	−.1	.4
Mowers	263.6	.1	.8
Natural Gas	1114.2	−1.3	−17.9
Office Machines	154.7	.2	.7
Paint	282.4	0	1.7
Paper	310.5	.5	3.2
Passenger Cars	249.8	12.0	6.5
Plumbing Fixtures	325.6	.2	3.4
Plywood	236.4	.3	1.0
Portland Cement	352.3	.7	−1.3
Residual Fuel	452.1	8.3	−48.9
Sand, Gravel	318.8	−2.0	2.7
Sanitary Papers	383.6	0	.8
Soaps, Detergents	273.5	1.0	−.7
Sporting Goods	208.0	0	1.8
Steel Mill Products	351.0	.3	−4.0
Struc. Clay Products	312.1	.4	4.4
Switchgear	286.1	−.3	1.0
Tires, Tubes	234.0	0	−.7
Transformers	233.6	−.2	.3
Trucks	348.1	3.8	3.8
Valves	107.4	.3	2.1
Wire, Cable	205.5	0	−.1
Wiring Devices	378.2	4.2	−.2

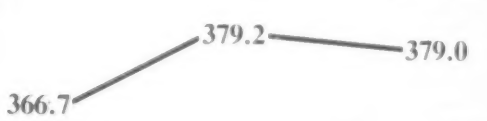
At-A-Glance Changes

MUNICIPAL COST INDEX



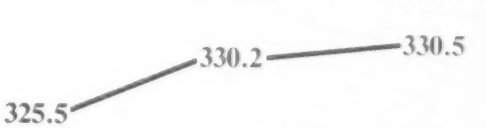
Percent Change From Last: Month .06 Year 1.1

CONSTRUCTION COST INDEX



Percent Change From Last: Month −0.5 Year 3.4

CONSUMER PRICE INDEX (BLS)



Percent Change From Last: Month .09 Year 1.5

PRODUCER PRICE INDEX (BLS)

Percent Change From Last: Month .2 Year −3.1

QUARTERLY MUNICIPAL TRENDS

	Current Level	Percent Change From: Last Qtr.	Last Year
Receipts	611.6B	.5	6.9
Federal Grants	106.1B	−.7	5.9
Durable Purchases	22.8B	1.8	9.1
Consumables	36.6B	−.3	−5.4
Services	378.9B	1.9	7.8
Structures	66.4B	6.9	15.9
Salaries, Wages	302.9B	1.7	7.1
Surplus	59.0B	−15.7	−.3
Employment	13.711M	−.2	.5